



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁴ : A23L 1/307	A1	(11) International Publication Number: WO 86/ 05364 (43) International Publication Date: 25 September 1986 (25.09.86)
(21) International Application Number: PCT/US86/00540 (22) International Filing Date: 17 March 1986 (17.03.86) (31) Priority Application Numbers: 713,735 833,832 (32) Priority Dates: 20 March 1985 (20.03.85) 28 February 1986 (28.02.86) (33) Priority Country: US (71) Applicant: FOOD SCIENCES CORPORATION [US/ US]; 821 East Gate Drive, Mt. Laurel, NJ 08054 (US). (72) Inventor: SAPATURA, J., Gail ; 38 Deanna Drive, 109 Sommerville, NJ 08876 (US). (74) Agent: BERNSTEIN, Alan, H.; Caesar, Rivise, Bern- stein & Cohen, Ltd., Suite 800 - Stephen Girard Build- ing, 21 South 12th Street, Philadelphia, PA 19107 (US).		(81) Designated States: AT (European patent), BE (Euro- pean patent), CH (European patent), DE (European patent), FR (European patent), GB (European pa- tent), IT (European patent), JP, LU (European pa- tent), NL (European patent), SE (European patent). Published <i>With international search report.</i>
(54) Title: COMPREHENSIVE NUTRITIONAL SYSTEM (57) Abstract A comprehensive nutritional system comprising a base mix and a flavoring. The base mix includes at least one pro- tein containing ingredient and the flavoring includes at least one flavoring agent. The base mix and flavoring are brought together in the presence of a sufficient quantity of water just prior to use. In the preferred form the comprehensive nutri- tional system is comprised of three protein containing ingredients and also includes lecithin. The flavoring in the preferred form includes at least one flavoring agent, such as a source of chocolate flavor or a vegetable. The invention also includes a method of preparing a food product using the base mix and flavoring.		

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AT	Austria	GA	Gabon	MR	Mauritania
AU	Australia	GB	United Kingdom	MW	Malawi
BB	Barbados	HU	Hungary	NL	Netherlands
BE	Belgium	IT	Italy	NO	Norway
BG	Bulgaria	JP	Japan	RO	Romania
BR	Brazil	KP	Democratic People's Republic of Korea	SD	Sudan
CF	Central African Republic	KR	Republic of Korea	SE	Sweden
CG	Congo	LI	Liechtenstein	SN	Senegal
CH	Switzerland	LK	Sri Lanka	SU	Soviet Union
CM	Cameroon	LU	Luxembourg	TD	Chad
DE	Germany, Federal Republic of	MC	Monaco	TG	Togo
DK	Denmark	MG	Madagascar	US	United States of America
FI	Finland	ML	Mali		
FR	France				

- 1 -

COMPREHENSIVE NUTRITIONAL SYSTEMField of the Invention

This invention is for a highly unique food system that enables the building of a large variety of diverse foods by starting with a common Base Mix.

Background Art

By virtue of the present invention, it is possible to bring together the Base Mix with a particular Flavoring and/or other ingredients to achieve such diverse foods as desserts, drinks, soup, vegetable and salad dressing. This is achieved while at the same time producing a line of vastly differing products, which are not only of good taste, but which possess certain necessary physical characteristics such as ease of solubility and mixing together. The achievement of the foregoing required considerable effort and expense over a relatively long period of time.

Disclosure of Invention

In this invention each of the two food components are separately maintained until just prior to use. The first food component is referred to as the Base Mix (Unflavored) and the second food component is referred to as the Flavoring. Examples of foods produced by this invention include a chocolate shake or a corn soup.

One of the advantages of the present invention is the considerable flexibility that exists by having the separately maintained Base Mix and Flavoring packets. This permits complete freedom in expanding the comprehensive nutritional system to other flavors or the addition of vitamins and minerals. Moreover, in some cases it is not practical to have the protein containing material in contact with the materials of the flavor packet or mix.

From the foregoing it can be seen that a particular food may be prepared in accordance with the comprehensive nutritional system of the present invention by using one Base Mix and one of the Flavoring packets. Thus, the comprehensive nutritional

- 2 -

system of the present invention gives considerable versatility, but at the same time assures values including protein, carbohydrates and fat. Such products also have a pleasing taste and can be prepared in a relatively simple and quick manner.

In the comprehensive nutritional system of this invention, the concept is to use the Base Mix together with a particular Flavoring, depending upon the final food desired. For instance, if one desires a chocolate drink (hot or cold), shake, pudding or frozen fudge bar, the comprehensive nutritional system involves bringing together Base Mix and Chocolate Flavoring (provided in a packet), then adding a selected amount of water to the Base Mix and Flavoring, followed by shaking, blending or stirring, including heating (optional) or with freezing in the case of a solid product. Products of other textures, such as puddings and soups are also produced through the present invention.

The Base Mix in its preferred form has four constituents. In the first set of examples to be given, the weights of the four constituents will add up to 32.6165 grams which is the selected total solids weight for this first part of the nutritional system. The Base Mix has a food value of 120 calories and contains the following:

1. 26.0 grams RT-34 Instant (referred to RT-34)
2. 3.3 grams Alanate 230
3. 3.3 grams TMP 1220
4. 0.0165 grams Lecithin M-C-Thin Asol 436 (referred to Lecithin)

The RT-34 constituent is a whey protein concentrate (34% by weight protein) manufactured by Ridgeview of La Crosse, Wisconsin. The Alanate 230 is a calcium sodium caseinate manufactured by New Zealand Milk Products, Inc., Petaluma, California. The TMP 1220 is a calcium sodium total milk proteinate also manufactured by New Zealand Milk Products, Inc. The Lecithin is manufactured by Lucas Meyer Inc. and is used as a surfactant.

- 3 -

The first three constituents of the Base Mix are each comprised of significant amounts of protein. The RT-34 also adds bulk, particularly dry powder bulk. Both the Alanate 230 and the TMP 1220 are present for their protein values and also have a low flavor profile. Therefore these two ingredients do not significantly affect the taste of the final product.

The Alanate 230 adds viscosity as well as protein to the final product. The TMP 1220 adds protein, but has very little effect on viscosity.

The Lecithin is necessary to make the two milk proteins instant.

In view of the foregoing it can be seen that the Base Mix adds a significant quantity of protein to the final product (when mixed with the Flavoring) as well as adding viscosity and bulk.

While the composition of the Base Mix will not vary, the composition of the Flavoring will vary quite significantly in view of the various flavors involved. For instance, the Flavoring can be of the dessert-type, such as Chocolate, Vanilla or Pineapple Apricot.

The Flavoring will also be vegetable flavors such as Corn, Onion and Tomato.

The Chocolate, Vanilla and Pineapple Apricot Flavorings each include a non-dairy creamer and a carbohydrate source.

The preferred non-dairy creamer is known as Wiptreme 2320 (Wiptreme) and is manufactured by Beatrice Foods Co. of Beloit, Wisconsin. This product contains corn syrup solids, partially hydrogenated vegetable oils (coconut, soybean), mono and diglycerides, sodium caseinate, glyceryl-lacto esters of fatty acids and dipotassium phosphate.

In the Chocolate Flavoring there are various flavoring agents, such as cocoa, vanilla and other chocolate flavoring or flavor sources as will occur to those skilled in the art, depending on the final taste desired. A preferred Chocolate

- 4 -

Flavoring has the following compositions for a food, drink, etc. having a food value of 60 calories:

60 Calories

Wiptreme 2320	6.4
Avicel RC-591 (Avicel)	2.28
Red Dutch Special Cocoa	3.50
Carrageenan CSW-2	0.35
Aspartame	0.18
TSPP	0.50
DSP	0.20
Lecithin	0.292

Additional Chocolate and Vanilla Flavorings may be added, as desired.

TSPP (tetrasodium pyrophosphate), DSP (disodium phosphate) and Avicel are manufactured by FMC corporation. TSPP and DSP are setting agents, with DSP speeding up the action of TSPP. Avicel possesses microcrystalline cellulose to add fibre and body.

Carrageenan CSW-2 is a cold water soluble gum and is manufactured by Hercules, Inc.

The combination of the Base Mix (120 calories) and Chocolate Flavoring (60 calories) can be formed into a drink, a shake, a pudding, an ice cream bar or hot cocoa in accordance with the following instructions:

DRINK - SHAKER

- 1) Pour 8 oz. of cold water into a shaker.
- 2) Add Base Mix, then Flavoring.
- 3) Shake for one minute or stir until dissolved.

BLENDER

- 1) Pour 8 oz. of cold water into a blender.
- 2) Add Base Mix, then Flavoring.
- 3) Blend on low speed for one minute.

SHAKE - BLENDER

- 1) Pour 6 oz. of cold water into a blender.
- 2) Add Base Mix, then Flavoring.
- 3) Blend on low speed, adding three ice cubes one at a time.
- 4) Blend on high speed for one minute.

- 5 -

PUDDING - BLENDER 1) Pour 4 oz. of cold water into a blender.
 2) Add Base Mix, then Flavoring.
 3) Blend on high speed for one minute.

ICE CREAM BAR - BLENDER 1) Pour 4 oz. of cold water into a blender.
 2) Add Base Mix, then Flavoring.
 3) Blend on high speed for one minute.
 4) Freeze.

HOT COCOA IN A CUP OR MUG 1) Add Base Mix and Flavoring to a cup or mug.
 2) Add 8 oz. of boiling water.
 3) Stir until dissolved.

A preferred Vanilla or Pineapple Apricot Flavoring has the following compositions for a food, drink, etc. having a food value of 60 and 50 calories, respectively:

<u>Vanilla Flavoring</u>	<u>60 Calories</u>
Wiptreme 2320	8.0
Avicel RC-591	1.80
Avicel CL-611	0.30
Carrageenan CSW-2	0.35
APM	0.12
TSPP	0.50
DSP	0.20
Color Shade R	0.0004
Lecithin	0.252

Vanilla Flavorings as desired.

<u>Pineapple Apricot Flavoring</u>	<u>50 Calories</u>
Wiptreme 2320	8.0
Avicel RC-591	1.80
Avicel CL-611	0.10
Carrageenan CSW-2	0.35
APM	0.08
TSPP	0.50
DSP	0.20
FD & C Yellow #5	0.0044
FD & C Yellow #6	0.0051
Lecithin	0.23

Pineapple Apricot Flavorings as desired.

- 6 -

Directions for use to achieve a Pineapple Apricot or Vanilla product are essentially the same as the instructions for the Chocolate product as set forth hereinabove. It is contemplated that with the aforesaid flavors, a drink, shake, pudding or ice cream bar will be the final product. The drink in the case of a Vanilla or Pineapple Apricot Flavoring will be cold or of the frozen type only. See the instructions hereinabove corresponding to the headings Drink-Shaker, Blender, Shake-Blender, Pudding-Blender and Ice Cream Bar-Blender. Furthermore, other products having different textures such as sherbets can be produced. For a sherbet the preparation protocol involves the first step of pouring 4 oz. of cold water into a blender. Then, Base Mix is added, followed by the Flavoring. The blender is then turned to high speed and blending action proceeds for one minute. The contents are then frozen to produce a frozen bar. Finally, the frozen bar is placed in the blender which is turned on to low speed until sherbet consistency is achieved.

Another aspect of the invention involves a Fruit Punch Mix and Lemon Drink Mix which are used to supplement potassium to the weight loss program. A total of six drinks may be taken per day.

The Fruit Punch Mix provides 6 calories and contains the following:

<u>6 Calories</u>		
Citric Acid	1.40 grams	±20% Affects flavor
Potassium Citrate	0.34	±20% Affects flavor
Cherry, Strawberry and Fruit Punch Flavors	0.48	±20% Affects flavor
Aspartame	0.114	±20% Affects flavor
Red #40	0.004	±20% Affects color

- 7 -

The Lemon Drink Mix provides 6 calories and contains the following:

<u>6 Calories</u>		
Citric Acid	1.47	±20% Affects flavor
Potassium Citrate	0.34	±20% Affects flavor
Lemon Flavor	0.29	±20% Affects flavor
Lemon Juice	0.10	±20% Affects flavor
Aspartame	0.08	±20% Affects flavor
FD & C Yellow #5	0.0002	±20% Affects color

The Flavoring for Corn (soup or souffle) has the following composition in terms of grams:

<u>60 Calories</u>		
Corn Powder	8.00	±30% Affects flavor
NDX-112V	2.70	±20% Affects mouthfeel
Avicel RC-591	1.10	±20% Affects mouthfeel
Salt	1.00	±20% Affects flavor
Butter Buds	1.00	±20% Affects flavor
Yeast-Special Light	0.80	±20% Affects flavor
Sugar	0.75	±20% Affects flavor
Super 3H	0.60	±20% Affects flavor
Guar Gum	0.30	±20% Affects mouthfeel and consistency
Sol-E Celery	0.10	±20% Affects flavor
Sol-E Onion	0.06	±20% Affects flavor
Pepper-Ground White	0.04	±20% Affects flavor
FD & C Yellow #5	0.006	±20% Affects color

The Flavoring for Onion (soup, dip or salad dressing) has the following composition in terms of grams:

<u>50 Calories</u>		
Wiptreme 2320	7.00	±20% Affects mouthfeel and consistency
Avicel RC-591	3.00	±20% Affects mouthfeel and consistency
TSPP	2.10	±20% Affects setting
Sol-E Onion	1.20	±20% Affects flavor
DSP	1.00	±20% Affects setting

- 8 -

50 Calories Cont'd

Onions-Freeze-Dried	1.00	±20%	Affects flavor
4BE	0.80	±20%	Affects flavor
Onion Flavor	0.60	±20%	Affects flavor
Onions-French Chopped	0.50	±20%	Affects flavor
Salt	0.50	±20%	Affects flavor
RFB Flavor	0.40	±20%	Affects flavor
Guar Gum	0.30	±20%	Affects mouthfeel and consistency
Beef Flavor	0.20	±20%	Affects flavor
Garlic Powder	0.06	±20%	Affects flavor
Pepper-Ground White	0.02	±20%	Affects flavor
Color Shade R	0.008	±20%	Affects color

The Flavoring for Tomato (soup, dip or salad dressing) has the following composition in terms of grams:

50 Calories

Tomato Powder	8.00	±30%	Affects flavor and mouthfeel
NDX-112V	2.80	±20%	Affects mouthfeel
Salt	1.50	±20%	Affects flavor
Avicel RC-591	1.10	±20%	Affects mouthfeel and consistency
Starch IF-131	0.80	±20%	Affects mouthfeel and consistency
Sodium Citrate	0.80	±15%	Affects mouthfeel and appearance
Super 3H	0.60	±25%	Affects flavor
MSG	0.50	±25%	Affects flavor
Tomato Flavor	0.30	±25%	Affects flavor
Citric Acid	0.25	±25%	Affects flavor
CBH	0.20	±25%	Affects flavor
Guar Gum	0.10	±20%	Affects mouthfeel and consistency
Sol-E Onion	0.09	±25%	Affects flavor
Celery Salt	0.05	±25%	Affects flavor
Pepper-Ground White	0.02	±25%	Affects flavor
Color Shade R	0.006	±20%	Affects color
Red #40	0.004	±20%	Affects color

The Vegetable Flavorings in the form of soups, such as Corn, Onion and Tomato are prepared by first adding the Base Mix

- 9 -

and the Flavoring to a cup or mug. This is followed by adding 8 oz. (1 cup) of boiling water, then stirring until dissolved and well mixed.

The Vegetable Flavoring in the form of a souffle, such as corn, is prepared by first adding the Base Mix and Flavoring to a bowl. This is followed with the addition of 4 oz. ($\frac{1}{2}$ cup) of boiling water and stirring until dissolved and well mixed. The mixture is then poured into a baking dish, followed by baking at 350° or 30 minutes.

The Vegetable Flavoring in the form of a dip such as onion and tomato is prepared by first pouring 4 oz. ($\frac{1}{2}$ cup) of cold water into a blender. This is followed with the addition of Base Mix and Flavoring. Blend on high speed for one minute and chill before serving. Seasonings such as chili powder or taco seasoning may be added before blending to the tomato mixture for variation.

The Vegetable Flavoring in the form of salad dressing such as onion and tomato is prepared by first pouring 4 or 5 oz. of cold water and 1 or 1 $\frac{1}{2}$ Tbsp. of vinegar into a blender (the lesser quantities are for onion and the greater quantities are for tomato). Then Base Mix and Flavoring is added along with $\frac{1}{2}$ packet of Equal™. Blend on high speed for one minute and chill before serving. Taco seasoning may be added before blending to the tomato mixture for variation.

The following is a list of the 170-180 calorie versions of the great variety of possible finished products:

170-180 Calories

VEGETABLE

Corn	Soup
Onion	Souffle
Tomato	Dip
	Salad Dressing

- 10 -

DESSERT

Chocolate
Vanilla
Pineapple Apricot

Drink
Shake
Pudding
Ice Cream Bar
Hot (Cocoa)
Sherbet

It is contemplated in a particular plan that the foregoing will be taken four times each day so that the daily caloric intake will be between 680 calories or 720 calories per day.

In each product, whether it be a dessert or vegetable, the amount of Base Mix added affects the consistency of the end product, the amount may be increased 20% and decreased 30% without significant difference.

In specific terms of ingredients, it is possible with reference to the chocolate and vanilla flavored drinks, etc. to vary in the Base Mix, the thickening and flavoring function of RT-34 $\pm 50\%$ depending on the desired degree of thickness or thinness of the final product.

TMP 1220 can be varied up to an increase of 50% or a decrease of 30%. Since TMP 1220 is present to add thickness and "set" it follows that where one uses a greater amount of TMP 1220 a thicker and more "set" product will result, with lesser effects being observed for lesser amounts of TMP 1220.

Alanate 230 may be varied in the same manner as TMP 1220 for desserts. Lecithin may only be increased 0.25% from the amount 0.0165 grams. Decreasing the amount would destroy the instant properties of the proteins.

With the soups, there is a somewhat smaller preferred variation in the four major ingredients of the Base Mix since here, each ingredient can be varied as much as +20% or -30%. Lecithin may only be increased 0.25%.

As to variations in the Flavorings desserts, Wiptreme 2320 can be varied $\pm 50\%$. Greater amounts of Wiptreme 2320 will make for higher consistency and lower amounts make for a lower consistency of the final product. Both Avicel RC-591 and Avicel

- 11 -

CL-611 can be varied $\pm 20\%$ which will effect consistency and mouthfeel. The aspartame component can be varied $\pm 20\%$, depending upon the desired effect on flavor.

Carrageenan CSW-2 can be varied $\pm 30\%$ as affecting thickness and setting properties. TSPP and DSP can be varied $\pm 20\%$ from the stated amounts to affect respectively "set" and time necessary for product to "set".

Also, the amount of water is varied depending on the desired consistency of the final product.

It should be kept in mind that an important principle of this invention is in the ability to combine the Base Mix with a Flavoring. When it is desired to prepare a particular food, 32.6165 grams of the Base Mix are placed in a container together with the contents of a Flavoring packet. Preparation of the food is then completed by adding water, stirring, etc. with heating or chilling, depending upon the desired end product.

With reference to the Base Mix, it is contemplated that there can be various substitutions of protein containing materials, such that the invention can be regarded as involving a Base Mix having at least one protein containing ingredient, although the three protein containing ingredients specified herein are preferred. In this connection one skilled in the art will be aware of other protein containing ingredients which can be substituted for the preferred composition set forth herein or in some cases only, one or two protein containing materials will be used, with or without the stated thickening or other effects as described hereinabove.

The ratio of components in yet another embodiment of the invention (New Program Mix) is different from the previously disclosed embodiments hereinabove. The earlier embodiments of this invention are comprised of four servings per day totalling 680-720 calories and the New Program now to be disclosed, (New Program), involves six servings per day totalling 690-720 calories. One New Program Base Mix packet provides 70 calories as opposed to 120 calories for the embodiments previously disclosed herein.

- 12 -

The New Program Formulas are as follows:

New Program Lemon Drink Mix: Same as with earlier embodiments of invention.

New Program Fruit Punch Drink Mix: Same as with earlier embodiments of invention.

New Program Base Mix: 70 Calories

14.00	Grams RT-34 Instant (referred to RT-34)
2.20	Grams Alanate 230
2.20	Grams TMP 1220
0.011	Grams Lecithin M-C Thin Asol #436 (referred to lecithin)

New Program Chocolate Flavoring Mix: 45 Calories

5.31	Grams Wiptreme 2320
2.75	Grams Cocoa M-2
1.29	Grams Avicel RC-591
0.60	Grams Carrageenan CSW-2
0.28	Grams TSPP
0.11	Grams DSP
0.10	Grams Aspartame
0.20	Grams Lecithin

Additional Chocolate Flavorings may be added, as desired.

New Program Vanilla Flavoring Mix: 45 Calories

6.20	Grams Wiptreme 2320
1.02	Grams Avicel RC-591
0.55	Grams Carrageenan CSW-2
0.28	Grams TSPP
0.17	Grams Avicel CL-611
0.11	Grams DSP
0.07	Grams Aspartame
0.20	Grams Lecithin

Additional Vanilla Flavorings may be added, as desired.

New Program Mocha Flavoring Mix: 45 Calories

5.80	Grams Wiptreme 2320
1.02	Grams Avicel RC-591
1.00	Grams Cocoa M-2
0.45	Grams Carrageenan CSW-2
0.28	Grams TSPP

- 13 -

New Program Mocha Flavoring Mix: 45 Calories

0.17 Grams Avicel CL-611
0.11 Grams DSP
0.055 Grams Aspartame
0.20 Grams Lecithin

Additional Coffee Flavorings may be added, as desired.

New Program Nacho Cheese Flavoring Mix: 50 Calories

4.00 Grams Cheese Powder
1.00 Grams Wiptreme 2320
2.00 Grams Avicel CL-611
2.00 Grams Starch
0.50 Grams TSPP
0.20 Grams DSP
0.30 Grams Yeast
0.20 Grams Salt
0.08 Grams Citric Acid
0.255 Grams Spices
0.261 Grams Lecithin
0.0044 Grams Yellow #5 FD & C
0.0003 Grams Yellow #6 FD & C

Additional Cheese and Butter Flavorings may be added, as desired.

New Program Tomato Flavoring Mix: 45 Calories

6.17 Grams Tomato Powder
2.16 Grams NDX-112V
1.00 Grams Fructose
1.16 Grams Salt
0.85 Grams Avicel RC-591
0.62 Grams Starch
0.62 Grams Sodium Citrate
0.46 Grams Super 3H
0.39 Grams MSG
0.19 Grams Citric Acid
0.15 Grams CBH
0.08 Grams Guar Gum
0.07 Grams Sol-E Onion
0.04 Grams Celery Salt
0.015 Grams Pepper-Ground White
0.009 Grams Color Shade R
0.007 Grams Red #40

Additional Tomato Flavorings may be added, as desired.

- 14 -

New Program Cream of Mushroom Flavoring Mix:

45 Calories

3.00	Grams	NDX-112V
2.00	Grams	Avicel RC-591
2.40	Grams	Lodex 10
2.00	Grams	Starch
0.25	Grams	Guar Gum
0.34	Grams	RFB
0.67	Grams	4BE
0.27	Grams	MF Flavor
0.20	Grams	Salt
0.05	Grams	Baking Soda
0.50	Grams	Mushroom Pieces

Additional Mushroom and Butter Flavorings may be added,
as desired.

Mixing instructions for the products in their various
forms are given below:

New Program Fruit Punch and Lemon Drink Mixes

DRINKS:

- 1) Add Flavoring Mix to a glass.
- 2) Pour 8 oz. (1 cup) of cold water.
- 3) Stir until dissolved.

New Program Vanilla, Chocolate and Mocha Flavoring Mixes

DRINKS:

- 1) Add Base Mix, then Flavoring Mix into a glass.
- 2) Pour in 6 oz. (3/4 cup) of cold water.
- 3) Stir until dissolved.

OR

- 1) Pour 6 oz. (3/4 cup) of cold water into a blender.
- 2) Add Base Mix, then Flavoring Mix.
- 3) Blend on low speed for 30 seconds.

SHAKE:

- 1) Pour 4 oz. (1/2 cup) of cold water into a blender.
- 2) Add Base Mix, then Flavoring Mix.
- 3) Blend on low speed, adding 2 ice cubes one at a time.
- 4) Blend on high speed for 1 minute.

- 15 -

- PUDDING:
- 1) Pour 3 oz. (1/3 cup) of cold water into a blender.
 - 2) Add Base Mix, then Flavoring Mix.
 - 3) Blend on high speed for 1 minute.

FROZEN

- DESSERT BAR:
- 1) Pour 3 oz. (1/3 cup) of cold water into a blender.
 - 2) Add Base Mix, then Flavoring Mix.
 - 3) Blend on high speed for 1 minute.
 - 4) Freeze.

- HOT DRINK:
(For Choco-
late and
Mocha Only)
- 1) Add Base Mix, then Flavoring Mix to a cup or mug.
 - 2) Add 6 oz. (3/4 cup) of boiling water.
 - 3) Stir until dissolved.

New Program Nacho Cheese Flavoring Mix

- SOUP:
- 1) Add Base Mix, then Flavoring Mix to a cup or mug.
 - 2) Add 5 oz. (2/3 cup) of boiling water.
 - 3) Stir until dissolved.

- DIP:
- 1) Pour 3 oz. (1/3 cup) of cold water into a blender.
 - 2) Add Base Mix, then Flavoring Mix.
 - 3) Blend on high speed for 1 minute.
 - 4) Chill before serving.

- SOUFFLE:
- 1) Add Base Mix, then Flavoring Mix to a bowl.
 - 2) Add 3 oz. (1/3 cup) of boiling water.
 - 3) Stir until dissolved.
 - 4) Pour mixture into a 6 oz. oven-proof custard cup or dessert dish and bake at 350 F for 30 minutes.

New Program Tomato Flavoring Mix

- SOUP:
- 1) Add Base Mix, then Flavoring Mix to a cup or mug.
 - 2) Add 5 oz. (2/3 cup) of boiling water.
 - 3) Stir until dissolved.

- 16 -

- DIP:
- 1) Pour 3 oz. (1/3 cup) of cold water into a blender.
 - 2) Add Base Mix, then Flavoring Mix.
 - 3) Blend on high speed for 1 minute.
 - 4) Chill before serving.

Variations:

- Chili Dip: Add 1/8 - 1/4 teaspoon of chili powder before blending.
- Mexican Dip: Add 3/4 teaspoon of taco seasoning mix before blending.

SALAD DRESSING:

- 1) Pour 4 oz. (1/2 cup) of cold water and 1 tablespoon of vinegar into a blender.
- 2) Add Base Mix, then Flavoring Mix and 1/2 packet of EqualTM (Aspartame).
- 3) Blend on high speed for 1 minute.
- 4) Chill before serving.

Variations:

- Taco Dressing: Add 3/4 teaspoon of taco seasoning mix before blending.

New Program Cream of Mushroom

- SOUP:
- 1) Add Base Mix, then Flavoring Mix to a cup or mug.
 - 2) Add 5 oz. (2/3 cup) of boiling water.
 - 3) Stir until dissolved.
- SOUFFLE:
- 1) Add Base Mix, then Flavoring Mix to a bowl.
 - 2) Add 3 oz. (1/3 cup) of boiling water.
 - 3) Stir until dissolved.
 - 4) Pour mixture into a 6 oz. oven-proof custard cup or dessert dish and bake at 350 F for 30 minutes.

The span of variation that is acceptable in the New Program formulas is approximately 66% (+) and (-) that of the formulas of the earlier disclosed embodiments.

Without further elaboration, the foregoing will so fully illustrate my invention that others may, by applying current or future knowledge, readily adopt the same for use under various conditions of service.

- 17 -

1. A comprehensive nutritional system comprising a Base Mix and a Flavoring, said Base Mix including at least one protein containing ingredient, said Flavoring including at least one flavoring agent, with said Base Mix and Flavoring being brought together in the presence of a sufficient quantity of water just prior to use.

2. The comprehensive nutritional system of Claim 1 wherein said Base Mix is comprised of three protein containing ingredients.

3. The comprehensive nutritional system of Claim 2 wherein said Base Mix ingredients include a major amount of a whey protein concentrate and minor amounts of a calcium sodium caseinate and a calcium sodium total milk proteinate.

4. The comprehensive nutritional system of Claim 3 wherein said Base Mix also includes lecithin, a surfactant.

5. The comprehensive nutritional system of Claim 2 wherein said Flavoring includes a non-dairy creamer.

6. The comprehensive nutritional system of Claim 5 wherein said Flavoring includes a carbohydrate source.

7. The comprehensive nutritional system of Claim 6 wherein said Flavoring includes at least one flavoring agent.

8. The comprehensive nutritional system of Claim 7 wherein said flavoring agent comprises a source of chocolate flavor.

9. The comprehensive nutritional system of Claim 7 wherein said flavoring agent comprises a source of vanilla flavor.

10. The comprehensive nutritional system of Claim 7 wherein said flavoring agent comprises a Pineapple Apricot flavor.

11. The comprehensive nutritional system of Claim 2 wherein said Flavoring includes a Corn Flavoring.

12. The comprehensive nutritional system of Claim 2 wherein said Flavoring includes Onion Flavoring.

13. The comprehensive nutritional system of Claim 2 wherein said Flavoring includes Tomato Flavoring.

- 18 -

14. The comprehensive nutritional system of Claim 4 wherein said Base Mix has the following ingredients:

1. 26.0 grams RT- 34 Instant
2. 3.3 grams Alanate 230
3. 3.3 grams TMP 1220
4. 0.0165 grams Lecithin

15. The comprehensive nutritional system of Claim 6 having the following ingredients:

60 Calories

Wiptreme 2320	6.4
Avicel RC-591 (Avicel)	2.28
Red Dutch Special Cocoa	3.50
Carrageenan CSW-2	0.35
Aspartame	0.18
TSPP	0.50
DSP	0.20
Lecithin	0.292

Additional Chocolate and Vanilla Flavorings may be added, as desired.

16. The comprehensive nutritional system of Claim 6 having the following ingredients:

<u>Vanilla Flavoring</u>	<u>60 Calories</u>
Wiptreme 2320	8.0
Avicel RC-591	1.80
Avicel CL-611	0.30
Carrageenan CSW-2	0.35
APM	0.12
TSPP	0.50
DSP	0.20
Color Shade R	0.0004
Lecithin	0.252
Vanilla Flavorings as desired.	

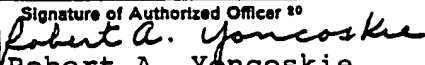
- 19 -

<u>Pineapple Apricot Flavoring</u>	<u>50 Calories</u>
Wiptreme 2320	8.0
Avicel RC-591	1.80
Avicel CL-611	0.10
Carrageenan CSW-2	0.35
APM	0.08
TSPP	0.50
DSP	0.20
FD & C Yellow #5	0.0044
FD & C Yellow #6	0.0051
Lecithin	0.23
Pineapple Apricot Flavorings as desired.	

17. A method of making a comprehensive nutritional system product, said method comprising providing a Base Mix and providing a Flavoring, said Base Mix including at least one protein containing ingredient, said Flavoring including at least one flavoring agent, bringing said Base Mix and Flavoring together in the presence of a sufficient quantity of water just prior to use and mixing said Base Mix and Flavoring sufficiently.

INTERNATIONAL SEARCH REPORT

International Application No PCT/US86/00540

I. CLASSIFICATION OF SUBJECT MATTER (If several classification symbols apply, indicate all) ¹		
According to International Patent Classification (IPC) or to both National Classification and IPC IPC (4): A23L 1/307 U.S. Cl. 426/590		
II. FIELDS SEARCHED		
Minimum Documentation Searched ⁴		
Classification System	Classification Symbols	
U.S.	426/593, 613, 656, 657, 590	
Documentation Searched other than Minimum Documentation to the Extent that such Documents are Included in the Fields Searched ⁴		
III. DOCUMENTS CONSIDERED TO BE RELEVANT ¹⁴		
Category ⁵	Citation of Document, ¹⁵ with Indication, where appropriate, of the relevant passages ¹⁷	Relevant to Claim No. ¹⁸
X	US, A, 4,251,550, Published 17 February 1981 Proctor	1, 2 and 5-17
Y	US, A, 3,978,245, Published 31 August 1976 Deininger et al	1-3, 5-13 and 17
Y	US, A, 4,242,364, Published 30 December 1980 Buddemeyer et al	1-14 and 17
Y	US, A, 4,438,147, Published 20 March 1984 Hedrick, Jr.	1-17
Y	CA, A, 688,859, Published 16 June 1964 McIntire	1-17
<div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <p>¹⁹ Special categories of cited documents: ¹⁵</p> <p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier document but published on or after the international filing date</p> <p>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p> </div> <div style="width: 48%;"> <p>"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step</p> <p>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.</p> <p>"&" document member of the same patent family</p> </div> </div>		
IV. CERTIFICATION		
Date of the Actual Completion of the International Search ²	Date of Mailing of this International Search Report ³	
05 May 1986	09 MAY 1986	
International Searching Authority ¹	Signature of Authorized Officer ²⁰	
ISA/US	 Robert A. Yoncoskie	